

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A method for quantization of a histogram bin value of an image, characterized in that: the range of the histogram bin value is non-uniformly quantized according to the frequency of occurrence.

a¹ 2. (Currently Amended) The method according to claim 1, wherein the range varies according to predetermined thresholds of the [r] histogram bin value.

3. (Original) The method according to claim 1, wherein the value having a histogram bin value of '0' is mapped into a single quantum, equivalent to a code value.

4. (Original) The method according to claim 1, wherein the values having a histogram bin value between '0.0' and a very close number of '0.0' is mapped into a single quantum, equivalent to a code value.

5. (Original) The method according to claim 2, wherein the values having a histogram bin value of more than the largest predetermined threshold are mapped into a single quantum, equivalent to a code value.

a' 6. (Original) The method according to claim 5, wherein when the range of the respective bin value of the histogram is normalized as the range of values from 0 to 1, the largest predetermined threshold is a value ranging from 0.1 to 1.

7. (Original) The method according to claim 1, wherein the histogram is a color histogram.

8. (Original) The method according to claim 7, wherein the histogram is a color structure histogram.

9. (Original) The method according to claim 2, wherein the range having a bin value of greater than '0' and less than the largest threshold is uniformly quantized into a plurality of sections.

10. (Original) The method according to claim 2, wherein the range having a bin value of greater than '0' and less than the largest threshold is non-uniformly quantized.

11. (Original) The method according to claim 10, wherein sub-ranges divided by the remaining thresholds are uniformly quantized into a plurality of sections.

12. (Original) The method according to claim 10, wherein the range having a bin value of greater than '0' and less than the largest threshold is from 0.0001 to 0.0999.

a¹ 13. (New) A method, comprising:
determining a histogram having a plurality of threshold values of a histogram bin value;
non-uniformly quantizing the histogram by using different range values in the at least first, second and third sections of the histogram determined by the threshold values.

14. (New) The method of claim 13, wherein values having a color histogram bin value between 0.0 and a number larger and very close to 0.0 are mapped into a single quantum of the first section of the histogram in quantizing the histogram bin value.

15. (New) The method of claim 14, wherein the second section is uniformly quantized within each of a plurality of sub-sections, wherein a range value for each sub-section is not equal.

16. (New) The method of claim 13, wherein the values having a histogram bin value of more than the largest predetermined threshold are mapped into a single quantum, and wherein when the range of the respective bin value of the histogram is normalized as the range of values from 0 to 1, the largest predetermined threshold is a value ranging from 0.1 to 1.

17. (New) The method of claim 13, wherein the first and third sections are each mapped into a single quantum.

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18. (New) The method of claim 13, wherein sub-ranges divided within the second section are uniformly quantized.

19. (New) The method of claim 13, comprising performing a search using the non-uniformly quantized histogram.

20. (New) The method of claim 13, wherein the histogram is a color histogram.

21. (New) A method for quantization of a histogram bin value of an image, comprising:

providing a plurality of 2^N bin values using N bits; and

non-uniformly quantizing a range of the histogram bin value according to the frequency of occurrence.

22. (New) The method of claim 21, wherein the range varies by using different range values in each of a first section of the histogram below a prescribed threshold of the histogram bin value and a second section of the histogram including the values greater than the prescribed threshold.

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23. (New) The method of claim 22, wherein a third section of the histogram includes values having a histogram bin value between 0.0 and a number larger and very close to 0.0 are mapped into a single quantum in quantizing the histogram bin value.

24. (New) The method of claim 23, wherein the number very close to 0 is 0.0000001.

25. (New) The method of claim 23, wherein the second section is uniformly quantized within each of a plurality of sub-sections.

26. (New) The method of claim 25, wherein the plurality of sub-sections each have a different range value.

27. (New) The method of claim 26, wherein the histogram is a color histogram.

28. (New) A multimedia searching method using a histogram that expresses feature information of multimedia, comprising:

a | non-uniformly quantizing a range of histogram bin value of an image according to
a frequency of occurrence; and

performing a search using the non-uniformly quantized histogram.

29. (New) A method for quantization of a histogram bin value of an image, comprising:

providing a plurality of 2^N bin values using N bits;

normalizing the histogram bin value so that each of the 2^N bin values becomes a number in a range of the histogram bin value between 0 and 1;

non-uniformly quantizing the bin values in the range of the histogram bin value according to the frequency of occurrence by dividing the range into three or more regions and allocating a different number of quantization levels according to a sub-range within each region.

30. (New) The method of claim 29, wherein the first region is allocated a single quantization level, the second region is allocated X quantization levels and the third region is allocated $2^N - X - 1$ quantization levels.

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31. (New) The method of claim 29, wherein the range is divided into six regions by five thresholds respectively being 0.000000001, 0.037, 0.08, 0.195 and 0.32, wherein N is equal to 8 bits, and wherein numbers of quantization levels uniformly allocated to the six regions are respectively 1, 25, 20, 35, 35 and 140.
